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PN - JP11351331 A 19991224  
TI - VIBRATION REDUCING DEVICE FOR INTERNAL COMBUSTION ENGINE  
PA - NISSAN MOTOR  
IN - HIRANO IZUHO  
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AN - 2000-119746 [11]  
TI - Vibration suppression device of internal combustion engine  
AB - JP11351331 NOVELTY - A planet gear mechanism is installed on a crank shaft (22) of an engine. An inertia mass (36) is fixed to a sun gear (35) of the planet gear mechanism. The inertia mass rotates in opposite direction of the crank shaft and suppresses roll vibration due to rotation of crank shaft.  
- DETAILED DESCRIPTION - The planet gear mechanism has an internal gear (26) integrated with the crank shaft. A planetary gear (28) of the planet gear mechanism is held by a fixed carrier and hence the sun gear engaged to planetary gear rotates in opposite direction of the crank shaft. A rotary shaft (33) supported on bearing (32) is coupled to the planetary gear. A drive pulley (34) is mounted on the rotary shaft. The drive pulley is connected to a driven pulley by belt. The driven pulley drives an auxiliary machine like power shearing pump, water pump etc.  
- USE - For suppressing vibration in internal combustion engine.  
- ADVANTAGE - Suppresses roll vibration of the crank shaft due to attachment of the inertia mass in the crank shaft with reverse rotation than that of the crank shaft. Drives auxiliary machines due to provision of the rotary shaft connected to the planetary gear. Improves mounting operation of engine since the auxiliary drive is taken centrally from the engine.  
- DESCRIPTION OF DRAWING(S) - The figure shows a cross sectional view of the vibration suppression device installed in internal combustion engine.  
- Crank shaft 22  
- Internal gear 26  
- Planetary gear 28  
- Bearing 32  
- Rotary shaft 33

- Drive pulley 34
- Sun gear 35
- Inertia mass 36
- (Dwg.2/7)

W - VIBRATION SUPPRESS DEVICE INTERNAL COMBUST ENGINE

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AB - VIBRATION REDUCING DEVICE FOR INTERNAL COMBUSTION ENGINE

AB - PROBLEM TO BE SOLVED: To make an engine having a device for reducing roll vibration more compact, and to improve the on-board property of the engine.

- SOLUTION: This vibration reducing device for internal combustion engine is provided with an inertial mass body 36 rotated by the action of an epicyclic gear mechanism to generate an inertial force. An internal gear 26 is fixed to a crank shaft 22 so as to integrally rotate concentrically with the crank shaft 22, a carrier 31 is fixed so as to prohibit the revolution of the inertial mass a planetary gear 28, and the inertial mass body 36 is formed so as to integrally rotate with a sun gear 35 in the direction opposite to the rotating direction of the crank shaft 22. In such a device, the planetary gear 28 is fixed to one end 31 of a rotating shaft 33 rotatably supported by a bearing 32 provided on a carrier 31 so as to integrally rotate, and a drive pulley 34 having a driving belt for driving an accessory wound thereon is fixed to the other end of the rotating shaft 33 so as to integrally rotate.

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IN - NISSAN MOTOR CO LTD

IN - HIRANO IZUHO

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